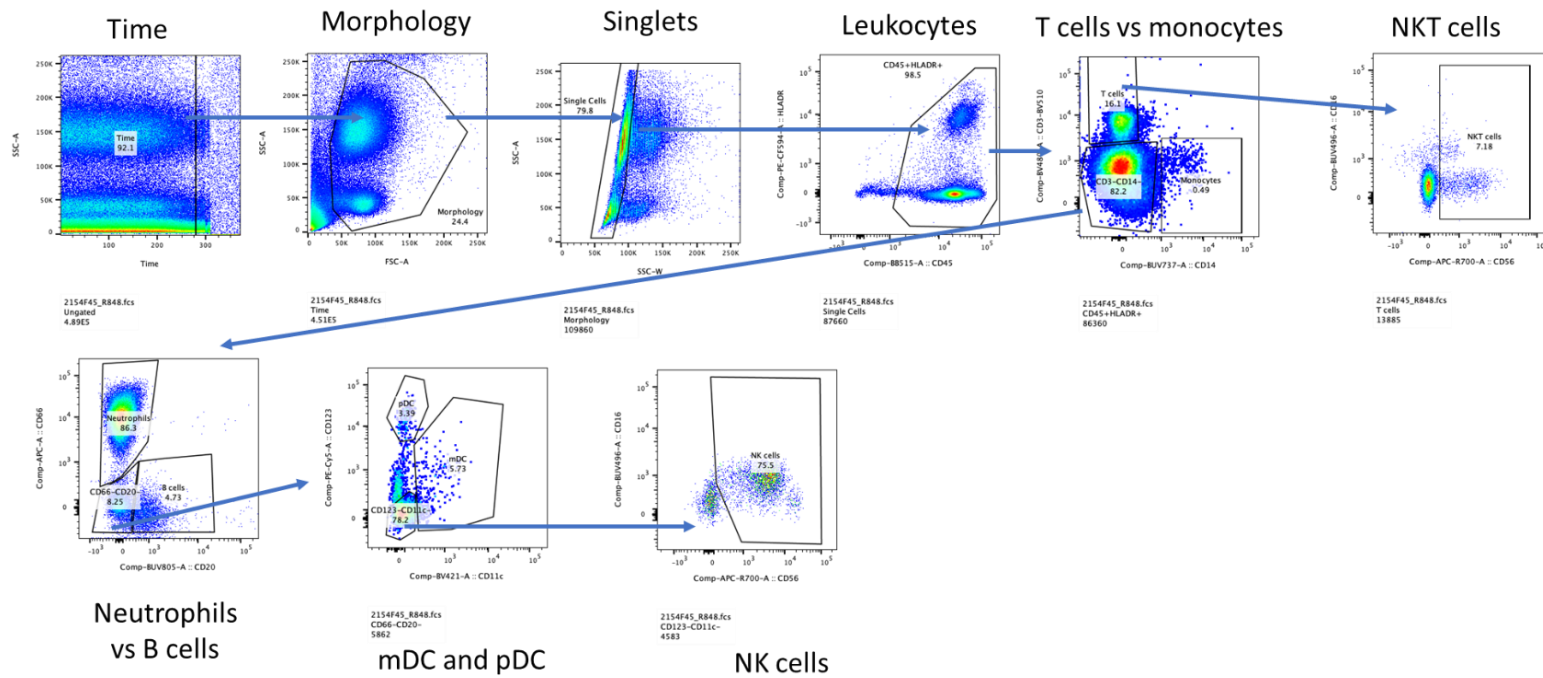
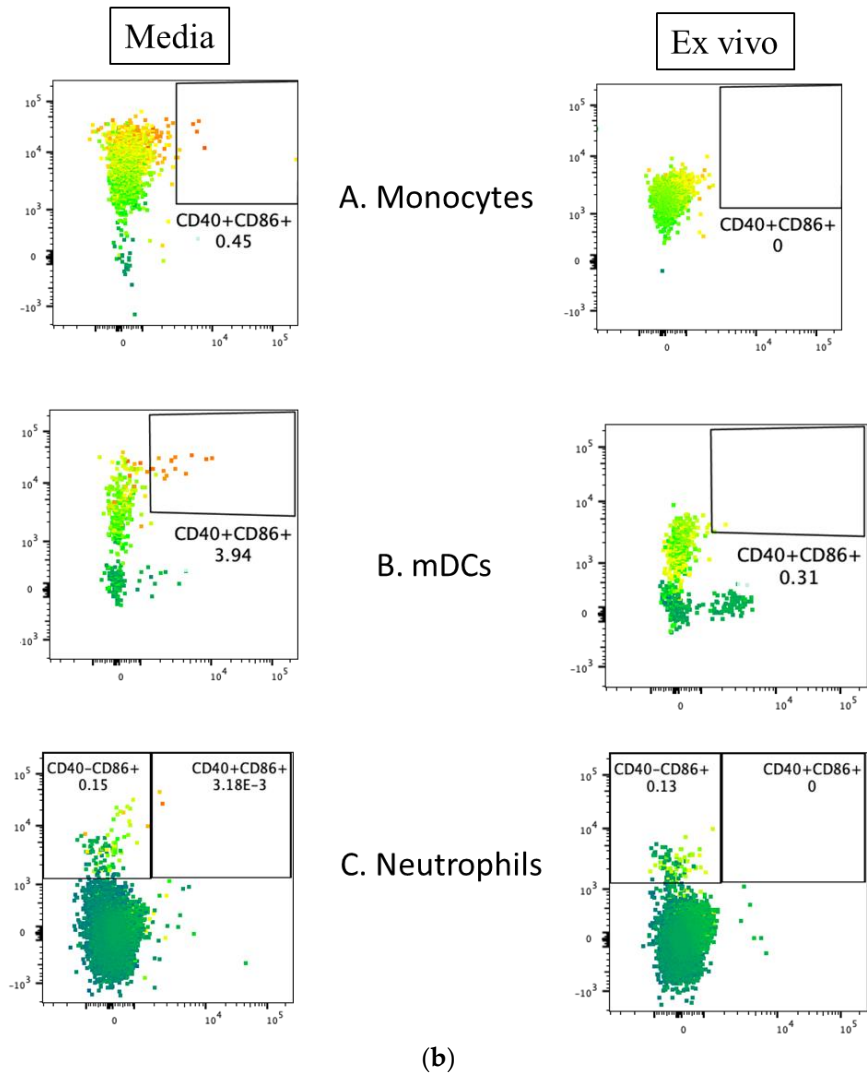


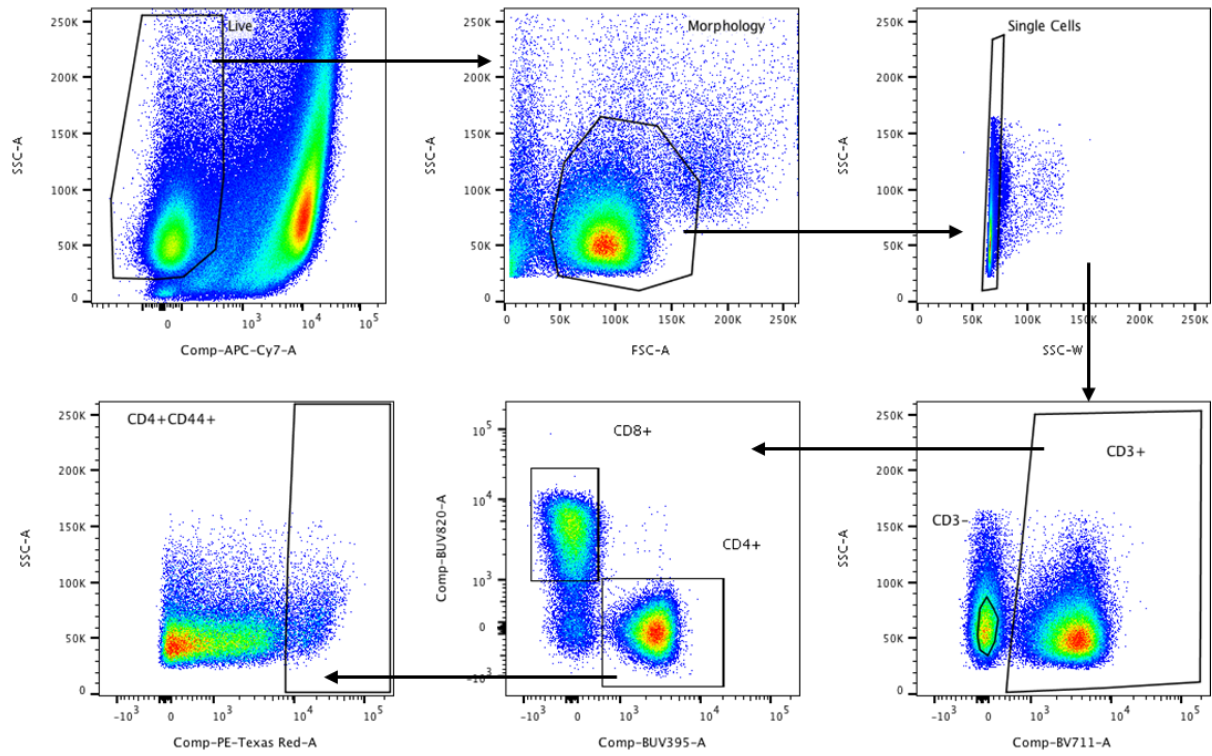
## Supplementary Figures and Tables



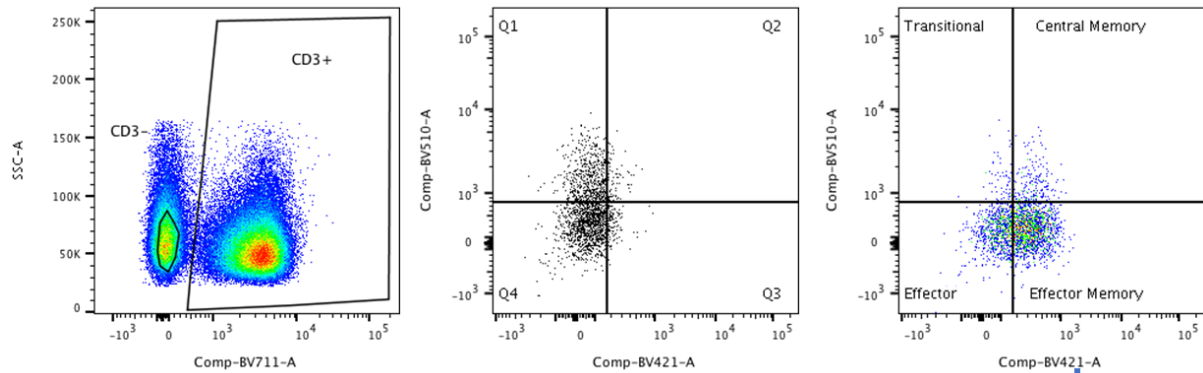
(a)



**Figure S1. (a):** Example of gating strategy for in vitro staining of human whole blood cells. T cells vs monocytes are identified after gating the leukocytes. Monocytes are further gated into Neutrophils, mDCs and NK cells. **(b):** Media and ex vivo staining for each cell type from Monocytes (A), mDCs (B) and Neutrophils (C).

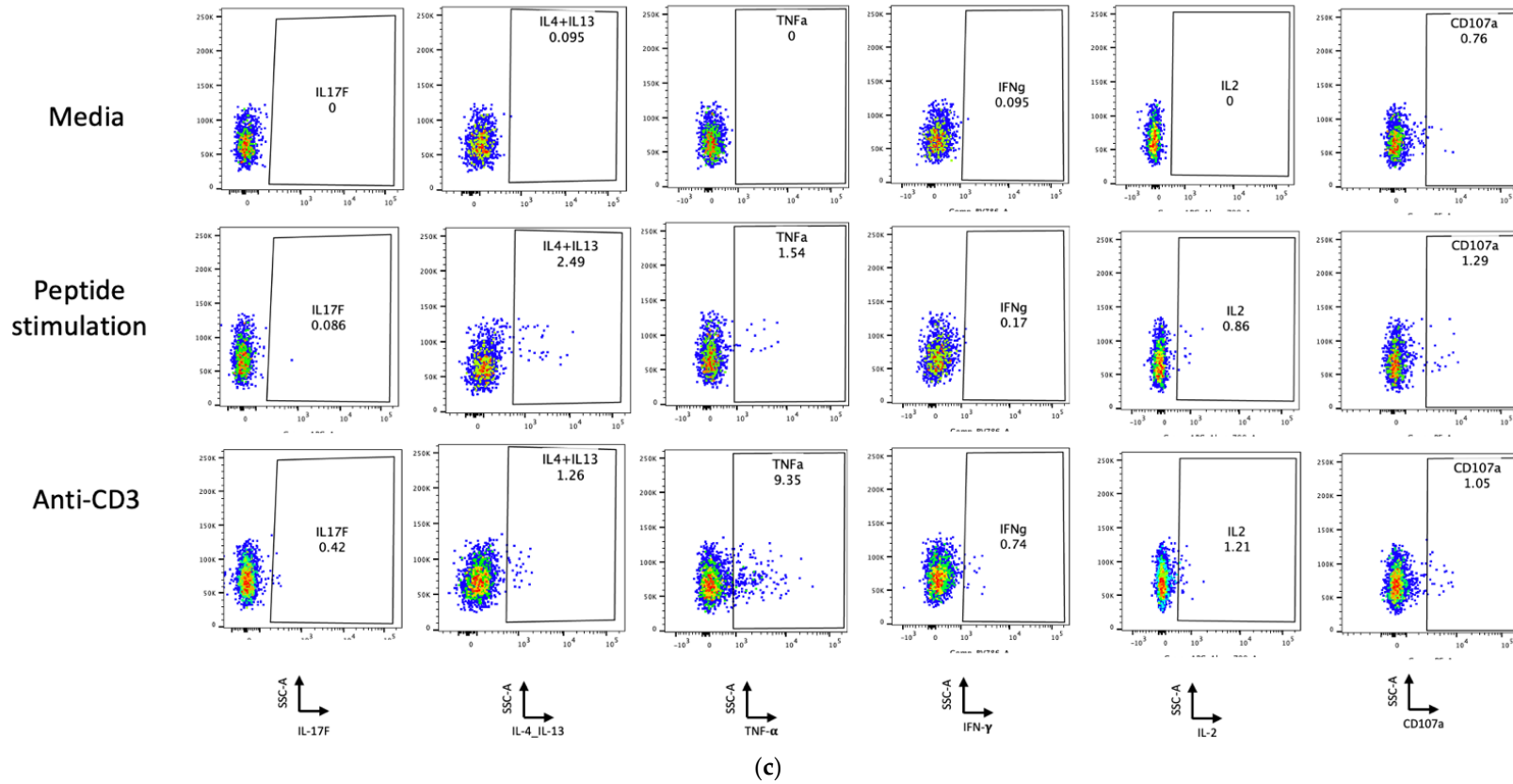


(a)



Cells from each quadrant are then gated for CD4+CD44+cytokine+ cells or CD8+CD44+cytokine+ cells as explained in Figure 2a

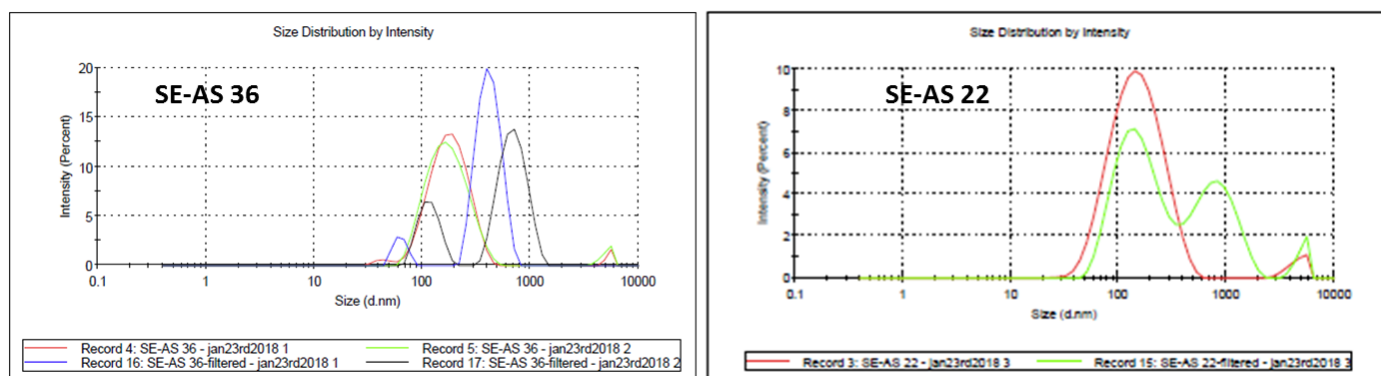
(b)



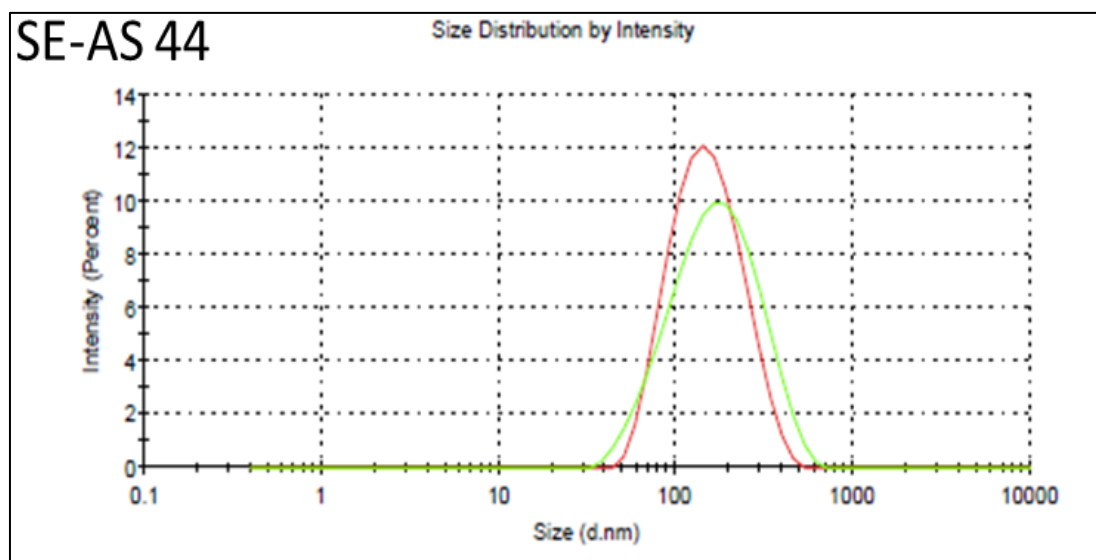
**Figure S2.** (a): Example of gating strategy for ICS. First live cells are differentiated from dead, and then separated based on morphology to get single cell lymphocytes, differentiated based on CD3 marker. CD4<sup>+</sup> and CD8<sup>+</sup> T cells are then gated based on CD3 gates followed by identifying antigen specific CD4<sup>+</sup> or CD8<sup>+</sup> T cells. (b): Example of gating strategy for Memory markers. CD3<sup>+</sup> cells are used to gate four quadrants of T lymphocyte cells based on CD62L and CD127 markers. Q1 represents transitional T cells, Q2 represents Central Memory T cells, Q3 represents Effector memory and Q4 represents Effector cells. (c): Representative ICS staining figure showing gating for media control, peptide stimulated cells and anti-CD3 control.

SE-AS	Before filtration		After filtration		% Content loss after filtration	
	Size	PdI	Size	PdI	Squalene	Tocopherol
22	135.2	0.241	230.1	0.484	31.12	32.38
36	173.3	0.283	371.3	0.619	45.12	61.02

**Table S1.** Size of the emulsions before and after filtration and % content loss after filtration for SE-AS 22 and 36.



**Figure S3.** Bimodal size distribution after filtration through 0.22 $\mu$  PES filter. Graphs in red & green for SE-AS 36 are before filtration, and those in blue and black are post filtration. For SE-AS 22, red is before and green is after filtration.



**Figure S4.** Size distribution by intensity for SE-AS 44, showing distribution pre- (red curve) and post- (green curve) filtration.

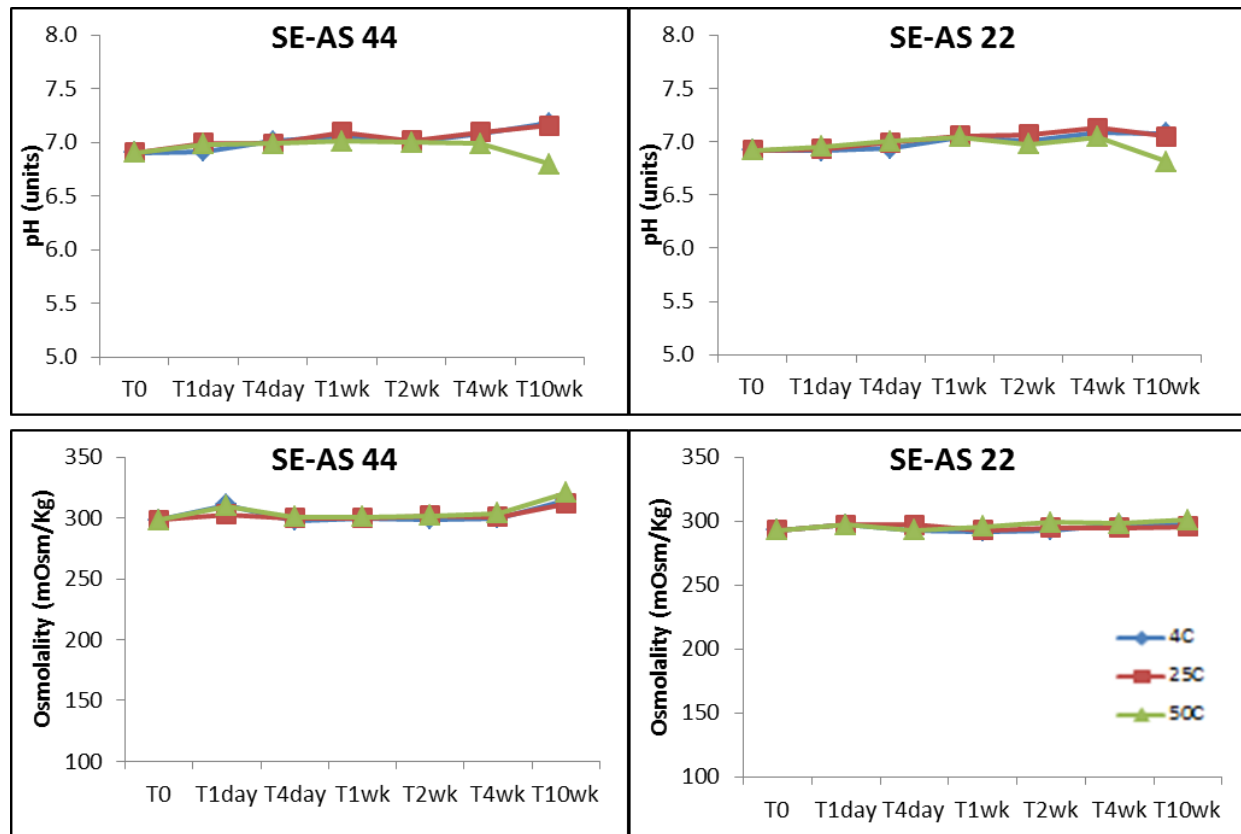


Figure S5. pH and Osmolality for emulsions stored at 4C (blue), 25C (red) and 50C (green) for up to 10 weeks.

(a) Overall CD4+ T cells	CM Q2	EM Q2	E Q4	
Neg. Control	0.010	0.006	0.005	
Unadjuvanted CMV	0.013	0.152	0.054	
SE-AS 44	0.010	0.310	0.073	
AS03	0.020	0.323	0.044	
SEA160	0.023	0.293	0.024	
(b) Th2-type CD4+ T cells	CM Q2	EM Q2	E Q4	
Neg. Control	0.002	0.000	0.000	
Unadjuvanted CMV	0.006	0.128	0.039	
SE-AS 44	0.008	0.235	0.053	
AS03	0.012	0.213	0.028	
SEA160	0.015	0.199	0.016	
(c) EFFECTOR MEMORY CD4+ T cells	Th0	Th1	Th2	Th17
Neg. Control	0.004	0.000	0.000	0.002
Unadjuvanted CMV	0.021	0.000	0.128	0.004
SE-AS 44	0.068	0.002	0.188	0.004
AS03	0.098	0.000	0.213	0.013
SEA160	0.086	0.002	0.199	0.006
(d) EFFECTOR CD4+ T cells	Th0	Th1	Th2	Th17
Neg. Control	0.004	0.000	0.000	0.000
Unadjuvanted CMV	0.013	0.001	0.039	0.000
SE-AS 44	0.020	0.000	0.042	0.000
AS03	0.015	0.000	0.028	0.001
SEA160	0.008	0.000	0.016	0.001

Table S2. Frequency of antigen-specific CD4+ T cells corresponding to figure 4 in overall CD4+ T cell population further characterized into memory T cells (a), Th2-type CD4+ T cells (b), overall effector memory T-cells (c) and effector cells (d).